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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/555,908      | 06/06/2000  | KAZUMASA TAKEMURA    | FURUP101US          | 9629             |

7590 06/09/2004

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| EXAMINER |
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FAULK, DEVONA E

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| ART UNIT | PAPER NUMBER |
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2644

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/555,908

Applicant(s)

TAKEMURA ET AL.

Examiner

Devona E. Faulk

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4,6,7,9,10 and 12-24 is/are allowed.
- 6) ☒ Claim(s) 1,3,5,8 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims **1,3,5,8 and 11** on pages 13-15 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's arguments, see paper No. 7, filed, 3/19/04, with respect to **claims 2,4,6,7,9,10 and 12** have been fully considered and are persuasive. The rejections of claims 2,4,6,7,9,10,12 have been withdrawn.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sibbald (U.S. Patent 6,498,857) in view of Bauck (Generalized Transaural Stereo and Applications) in further view of Hayakawa (JP 6165298).

Regarding **claim 1**, Sibbald discloses a method of processing a pair of monophonic signals for virtually creating a surround left sound source and a surround right sound source (Figure 1) and performing virtual localization processing to the pair of monophonic signals to produce a first and second virtual localization output (column 6, lines 35-45). Although he teaches on the above named elements, he fails to disclose creating the surround left and right sound sources through a center speaker. However, the concept of creating sound sources through a left, right and center speaker to two listeners, the loudspeakers about a central axis was well

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known in the art at the time of filing as taught by Bauck. Bauck teaches of geometry for three loudspeakers and two listeners (Figure 5) (Section 4.3) in which the three loudspeakers and two heads are arrayed symmetrically about a central axis. It is obvious to modify Sibbald's method by having a center speaker. It is obvious that although Sibbald teaches of just one listener that there can be more than one listener present when sound is transmitted in an open space.

Modifying Sibbald's method such that there that the sound sources are created using three speakers, having two listeners as taught by Bauck reads on "virtually creating a surround left sound source and a surround right sound source to a first listener and a second listener through a front left speaker, a front center speaker, and a front right speaker", "placing the front left speaker and the front center speaker respectively to front left side and front right side of the first listener", "placing the front center speaker and the front speaker respectively to a front left side and a front right side of the second listener", "arranging the front left speaker and front right speaker symmetrically" as claimed. Although Bauck teaches of using three speakers, he fails to teach of supplying the first virtual localization output to the front left and right speaker and a second output to the center speaker. However the concept of having one output supplied to a front left and right speaker and a second output supplied to a center speaker was well known in the art at the time of filing as taught by Hayakawa. Hayakawa teaches in Figure 8, of a first output supplied to a front left and right speaker and a second output supplied to a center speaker. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sibbald's method by using Bauck's method of using three speakers to create a sound source and Hayakawa concept of supplying the outputs as claimed for the benefit of providing better sound images to the user.

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5. **Claims 3, 5, 8 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sibbald (U.S. Patent 6,498,857) in view of Scofield et al. (U.S. Patent 6,144,747) in further view of Hayakawa (JP 6165298).

**Claims 5, 8 and 11 read like claim 3** and all elements of each claim are comprehended by claim 3. Therefore, claims 5, 8, and 11 are rejected for the same reasons given below.

Regarding **claims 3,5,8 and 11**, Sibbald discloses a method of processing a pair of monophonic signals for virtually creating a surround left sound source and a surround right sound source (Figure 1) and performing virtual localization processing to the pair of monophonic signals to produce a first and second virtual localization output (column 6, lines 35-45).

Although he teaches on the above named elements, he fails to disclose creating the surround left and right sound sources through a center speaker. However, the concept of creating sound sources through a left, right and center speaker was well known in the art at the time of filing as taught by Scofield. Scofield teaches of creating sound sources through three loudspeakers receiving inputs from a virtual sound processor. It is obvious to modify Sibbald's method by having a center speaker. It is obvious that although Sibbald teaches of just one listener that there can be more than one listener present when sound is transmitted in an open space. Modifying Sibbald's method such that there that the sound sources are created using three speakers "virtually creating a surround left sound source and a surround right sound source to a first listener and a second listener through a front left speaker, a front center speaker, and a front right speaker". Although Scofield teaches on the above named element, he fails to disclose mixing the surround left channel signal and the surround right channel signal and supplying the resulting signals to a virtual localization processing as a first monophonic signal and a second monophonic

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signal. However, the concept of mixing a surround left and a surround right channel signal producing a monophonic signal was well known in the art as taught by Aylward. Aylward discloses a method of down-mixing a plurality of signals including a surround left and surround right having a summer that sums the original left and right channel surround signals into a single monophonic pair (column 1, lines 35-38). Modifying Sibbald's and Scofield's method and apparatus by using Aylward's concept of supplying monophonic signals reads on "wherein resulting signals generated by mixing the surround left channel signal and the surround right channel signal are supplied to a virtual localization processing as a first monophonic signal and a second monophonic signal" Although Aylward teaches on the above name element he fails to teach of having one output supplied to a front left and right speaker and a second output supplied to a center speaker. However the concept of having one output supplied to a front left and right speaker and a second output supplied to a center speaker was well known in the art at the time of filing as taught by Hayakawa. Hayakawa teaches in Figure 8, of a first output supplied to a front left and right speaker and a second output supplied to a center speaker. Modifying Sibbald, Scofield and Aylward's method and apparatus by using Hayakawa's concept of supplying outputs to speakers reads on "wherein a first virtual localization output of the virtual localization processing means is supplied to the front left speaker and the front right speaker" and "wherein a second virtual localization output of the virtual localization processing means is supplied to the front center speaker". Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sibbald, Scofield and Aylward's method and apparatus by using three speakers to create a sound source and Hayakawa concept of supplying the outputs as claimed for the benefit of providing better sound images to the user.

***Allowable Subject Matter***

6. Claims **2,4,6,7,9,10,12-24** are allowed.
7. The following is an examiner's statement of reasons for allowance:
8. See No. 2 under response to arguments.
9. Claims 4 and 6 are allowable due to dependency on claim 2.
10. Claims 10,13-24 are allowable due to dependency on claim 7.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

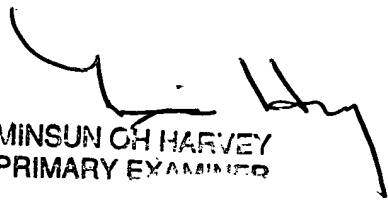
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devon E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Risen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER